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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/571,601	03/10/2006	Serge Vallet	0595-1062	9773
466	7590	07/26/2007		
YOUNG & THOMPSON 745 SOUTH 23RD STREET 2ND FLOOR ARLINGTON, VA 22202			EXAMINER DEB, ANJAN K	
			ART UNIT 2858	PAPER NUMBER
			MAIL DATE 07/26/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/571,601	VALLET ET AL.	
	Examiner	Art Unit	
	Anjan K. Deb	2858	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 27-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30, 33-45 and 48-52 is/are rejected.
- 7) ☒ Claim(s) 31, 32, 46 and 47 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>03/10/2006</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Specification does not conform to preferred layout for the specification of a utility application.

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 48 is rejected under 35 U.S.C. 102(b) as being anticipated by Deardurff (US 3,818,412).

Re claim 48, Deardurff disclosed harness (insulated cable) (Fig. 3) including at least one electrical conductor 22 within an electrically insulating tube 24, said tube being provided with a protective covering 26, wherein said protective covering comprises a screen of a material absorbing electromagnetic field energy. Carbon particles suspended in the overcoat layer is broadly interpreted as forming a screen (column 3 lines 17-22, 37-39).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 27-30, 39, 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall (US 4,973,911) in view of Snitzer (US 4,298,794).

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The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Re claim 27, Marshall disclosed electromagnetic compatibility testing of cable 9 including steps a) and b) of amplification and applying from amplifier 6 a signal to sheath of cable 9 (Fig.1). A sheath of cable 9 is clearly shown in Fig. 3 and 4.

Marshall did not expressly disclose the step c) for taking temperature measurements and locating defect on the map.

Snitzer disclosed taking temperature measurements along a cable, and drawing up a map of the temperature and locating the defect (HOT SPOT) of the harness (cable) on the map. The temperature trace shown on the top of Fig. 1 is broadly interpreted as a map of the temperature.

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall by adding temperature measuring device for taking temperature measurements along a cable, and drawing up a map of the temperature and locating the defect (HOT SPOT) of the harness (cable) on the map disclosed by Snitzer for locating a defect in the cable.

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Re claims 28, 29 Marshall disclosed wide band frequency source 2 in the range 100 kHz to 1000 MHz (column 1 lines 40-44).

Marshall did not expressly disclose sinewave signal in the range 1 GHz to 5 GHz but would have been obvious to do so to simulate real world environment so that energy is supplied at every frequency likely to be encountered in the working environment (column 1 lines 40-43).

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall by applying sinewave signal in the range 1 GHz to 5 GHz to simulate real world environment so that energy is supplied at every frequency likely to be encountered in the working environment.

Re claim 30, Marshall disclosed detection zone 11,12 is close to said shielding sheath 9 (Fig. 1).

Re claim 39, Marshall as modified by Snitzer did not disclose the method being implemented on a plurality of adjacent harnesses [see MPEP 2144.04 B. Duplication of Parts In re Harza, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) Although the reference did not disclose a plurality of ribs, the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced].

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall and Snitzer by implementing the method on a plurality of adjacent harnesses for testing plurality of adjacent harnesses.

Re claim 40, Marshall disclosed (Fig. 1) first means 2 for generating stimulation electrical signals in an operating frequency range at a predetermined power level; second means 6 (amplifier) connected to the first means 2 via a link for raising said stimulation electrical signals to a predetermined power level; third means 8 (transformer) connected to the second means 6 via a link, for applying said stimulation electrical signals to the shielding sheath of cable 9 in such a manner as to generate an electromagnetic field.

Marshall did not expressly disclose fourth means for converting the radiant energy emitted by the electromagnetic field at a defect into thermal energy; and fifth means for detecting the thermal energy and associated with an image acquisition and storage unit, an image processor unit, and an image display unit in order to perform thermal analysis, draw up a temperature map, and locate on said temperature map the electromagnetic protection defect of said shielding sheath of the harness (cable).

Snitzer disclosed (Fig. 1) means for converting the radiant energy emitted by the electromagnetic field at a defect into thermal energy (thermal dependence) (column 4 lines 43-47); and fifth means for detecting (detector) the thermal energy and an image display unit in order to perform thermal analysis, draw up a temperature map (temperature trace shown on top of Fig. 1), and locate on said temperature map the electromagnetic protection defect (HOT SPOT) of said shielding sheath of the harness (cable).

Snitzer did not expressly disclose image processor unit associated with an image acquisition and storage unit but would have obvious to provide image acquisition and storage unit including a processor for performing the thermal analysis (column 9 lines 17-25).

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall by adding temperature measuring device for taking temperature measurements along a cable, and drawing up a map of the temperature and locating the defect (HOT SPOT) of the harness (cable) on the map disclosed by Snitzer and including image processor unit associated with an image acquisition and storage unit for performing thermal analysis for locating hot spot in the cable.

6. Claims 33-38, 41-44, 49-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall (US 4,973,911) and Snitzer (US 4,298,794) in view of Deardurff (US 3,818,412).

Re claims 33-38, 49-52, Marshall combined with Snitzer disclosed all of the claimed limitations as set forth above except shielding sheath constituted by textile braid on which electromagnetic field energy absorbing material containing carbon has been deposited.

Deardurff disclosed harness (insulated cable) comprising shielding sheath 26 (protective covering) including material absorbing electromagnetic energy comprising carbon particles deposited thereon and a textile braid (fiber glass braid) (column 3 lines 17-22, 37-39 and column 4 line 2).

While Deardurff disclosed electromagnetic field energy absorbing material-containing carbon in a protective layer for cable shielding it did not expressly disclose the textile braid comprises material absorbing electromagnetic energy.

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall and Snitzer by implementing the test method on a cable comprising electromagnetic field energy absorbing material containing carbon disclosed by

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Deardurff for cable shielding and further by adding energy absorbing material containing carbon to textile braid disclosed by Deardurff so as to form another layer for radiation shielding.

Re claims 41-44, Marshall as modified by Snitzer disclosed all of the claimed limitations as set forth above except fourth means include electromagnetic field energy absorbing material containing carbon.

Deardurff disclosed harness (insulated cable) (Fig. 3) including at least one electrical conductor 22 within an electrically insulating tube 24, said tube being provided with a protective covering 26, wherein said protective covering comprises a screen of a material absorbing electromagnetic field energy. Carbon particles suspended in the overcoat layer is broadly interpreted as forming a screen (column 3 lines 17-22, 37-39). Re claim 43, Deardurff disclosed flexible film (outer jacket including rubber) but did not expressly disclose having said conductive material deposited thereon.

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall and Snitzer by adding electromagnetic field energy absorbing material containing carbon to cable sheath (protective covering 26) disclosed by Deardurff for radiation shielding (column 3 lines 17-27).

7. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall (US 4,973,911) and Snitzer (US 4,298,794) in view of Gentry (US 3,746,582).

Re claim 45, Marshall as modified by Snitzer disclosed all of the claimed limitations as set forth above except infrared camera.

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Gentry disclosed infrared camera 20 (scanner sensor) for measuring cable temperature (column 2 lines 28-30)(Figure).

At the time the invention was made it would have been obvious for one of ordinary skill in the art to modify Marshall and Snitzer by adding infrared camera disclosed by Gentry for measuring cable temperature.

Allowable Subject Matter

8. Claims 31, 32, 46, 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claims 31 and 32 are allowable because the prior art does teach or render obvious method for locating harness defect wherein the temperature range of a temperature map is converted into a palette of colors.

Claims 46 and 47 are allowable because the prior art does teach or render obvious including means for drawing up a temperature map in the form of a false color display, each color representing a predetermined temperature difference.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Varkey (US 7,188,406 B2) disclosed methods of manufacturing enhanced electrical cables including nano-carbon particles embedded in outer jacket of polymeric material.

Crowe et al. (US 6,811,307 B2) disclosed measurement of cable temperature profile comprising detector and analyzer (Fig. 4).

Tuttle (US 6,281,685 B1) disclosed detector for locating Cable shield fault.

Perron (US 4,737,917) disclosed color-coded temperature map for generating isotherms in a forehearth temperature control.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Anjan K. Deb whose telephone number is 571-272-2228. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew H. Hirshfeld can be reached at (571) 272-2168.



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Primary Patent Examiner

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7/19/07

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